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REMARKS

In response to the office action dated April 29, 2005, Applicants respectfully request reconsideration based on the above claim amendments and the following remarks. Applicants respectfully submit that the claims as presented are in condition for allowance.

Claims 1, 3 and 6 are amended. New claims 9-13 are added. Support for these claim amendments is found at least at p.4, lines 26-30, p.5, lines 10-14 and 22, p. 3, lines 11-14. No new matter has been introduced by these amendments. Upon entry of this amendment, claims 1-13 are present for consideration.

As explained below, Applicants believe they have placed the claims in condition for allowance according to 37 C.F.R. 1.116, and respectfully request reconsideration and allowance of the claims in view of the above amendments and the following remarks.

Claim Rejections Under 35 U.S.C. §112

Claims 3 and 6 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In particular, the Office Action stated that it was unclear what is meant by the phrases "one of a functional group" and "a terminal of nucleic acids" in claim 3 and "a terminal of a primer" and "one of a functional group" in claim 6.

Claims 3 and 6 are each amended to clarify that the claim involves a functional group or a material.

Applicants assert that the phrases "a terminal of nucleic acids" and "a terminal of a primer" are not unclear. A "terminal" of a nucleic acid, including a probe or primer, is an end of the nucleic acid.

In view of these clarifying amendments and remarks, Applicants respectfully request reconsideration and withdrawal of the rejection of claims 3 and 6 under 35 U.S.C. § 112, second paragraph.

Claim Rejections Under 35 U.S.C. § 102(b)

Claims 1-2 and 5-8 were rejected under 35 U.S.C. § 102(b), as allegedly anticipated by

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Cantor et al. (U.S. Patent 5,795,714). Applicants respectfully traverse this rejection.

Cantor et al. teach a method for replicating an array of single-stranded probes on a solid support comprising a) synthesizing an array of nucleic acids each comprising a non-variant sequence of length C at a 3'-terminus and a variable sequence of length R at a 5'-terminus; b) fixing the array to a first solid support; c) synthesizing a set of nucleic acids each comprising a sequence complementary to the non-variant sequence; d) hybridizing the nucleic acids of the set to the array; e) enzymatically extending the nucleic acids of the set using the variable sequences of the array as templates; f) denaturing the set of extended nucleic acids; and g) fixing the denatured nucleic acids of the set to a second solid support to create the replicated array of single-stranded probes. (Cantor et al., claim 1)

To anticipate a claim, a reference must disclose each and every element of the claim.

Lewmar Marine v. Varient Inc., 3 U.S.P.Q.2d 1766 (Fed. Cir. 1987).

Applicants have amended claim 1 such that the manufacturing step now comprises the following element

“wherein immobilizing one of the first nucleic acid probes comprises bringing a protruding portion of the first substrate into contact with a solution of the first nucleic acid probe filling a recessed portion of another uneven substrate such that the first nucleic acid probe is immobilized on the surface of the protruding portion of the first substrate”

Cantor et al. do not anticipate Applicants' amended claim 1 because Cantor et al. do not teach Applicants' claim 1 element “wherein immobilizing one of the first nucleic acid probes comprises bringing a protruding portion of the first substrate into contact with a solution of the first nucleic acid probe filling a recessed portion of another uneven substrate such that the first nucleic acid probe is immobilized on the surface of the protruding portion of the first substrate”. Given that claims 2 and 5-8 each include or further limit all of the elements of claim 1, Applicants respectfully request the reconsideration and withdrawal of the rejection of claims 1-2 and 5-8 under 35 U.S.C. § 102(b) over Cantor et al.

Claim Rejections Under 35 U.S.C. § 102(e)

Claims 1, 5 and 8 were rejected under 35 U.S.C. § 102(e), as allegedly anticipated by

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Church et al. (U.S. Patent 6,511,803). Applicants respectfully traverse this rejection.

Church et al. teach diluting a nucleic acid pool onto a semi-solid medium on a solid surface (col. 14, lines 34-36) and immobilizing the members of the nucleic acid pool to the semi-solid medium (col. 14, lines 45-60), amplifying the immobilized nucleic acids *in situ* using a primer to bind to the immobilized nucleic acids (col. 18, line 64 to col.19, line 67) and then “replica plating” the array (col. 20, lines 9-63).

To anticipate a claim, a reference must disclose each and every element of the claim.

Church et al. do not anticipate Applicants’ amended claim 1 because Church et al. do not teach Applicants’ claim 1 element “wherein immobilizing one of the first nucleic acid probes comprises bringing a protruding portion of the first substrate into contact with a solution of the first nucleic acid probe filling a recessed portion of another uneven substrate such that the first nucleic acid probe is immobilized on the surface of the protruding portion of the first substrate”. Given that claims 5 and 8 each include or further limit all of the elements of claim 1, Applicants respectfully request the reconsideration and withdrawal of the rejection of claims 1, 5 and 8 under 35 U.S.C. § 102(b) over Church et al.

Claim Rejections Under 35 U.S.C. §103

Claims 3 and 4 were rejected under 35 U.S.C. 103(a) as being allegedly unpatentable over Cantor et al. (U.S. Patent No. 5,795,714) in view of Dickinson et al. (U. S. Patent 6,770,441) for the reasons indicated on pages 5 and 6 of the Office Action. Applicants respectfully traverse this rejection for the following reasons.

For an obviousness rejection to be proper, the Examiner must meet the burden of establishing that all elements of the invention are disclosed in the prior art. *In re Fine*, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988); *In re Wilson*, 165 U.S.P.Q. 494, 496 (C.C.P.A. 1970); *Amgen v. Chugai Pharmaceuticals Co.*, 927 U.S.P.Q.2d, 1016, 1023 (Fed. Cir. 1996).

Applicants argue that the Examiner has failed to establish a *prima facie* case of obviousness, and therefore, the obviousness rejection under 35 U.S.C. §103(a) is improper because all elements of the invention are not disclosed in the cited references.

Claims 3 and 4 each include or further limit all of the elements of claim 1. Therefore for an obviousness rejection of Claims 3 and 4 over Cantor et al. in view of Dickenson et al., Cantor

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et al. and Dickinson et al. must disclose all the elements of amended claim 1 and also those of claims 3 and 4.

As discussed above, Cantor et al. fail to teach at least the following element of amended claim 1:

“wherein immobilizing one of the first nucleic acid probes comprises bringing a protruding portion of the first substrate into contact with a solution of the first nucleic acid probe filling a recessed portion of another uneven substrate such that the first nucleic acid probe is immobilized on the surface of the protruding portion of the first substrate”

Therefore since Cantor et al. neither teach nor suggest this element of claim 1, Dickinson et al. must teach or suggest this element for the obviousness rejection to be proper. Dickinson et al. teach a submaster structure with protruding portions that is used to form a molded layer (Fig 14A, part 310; col. 4, lines 1-10), however Applicants cannot find any statement in Dickinson et al. that teaches or suggests bringing a protruding portion of this submaster structure into contact with a nucleic acid probe solution such that the nucleic acid probe is immobilized on the surface of the protruding portion of the submaster structure. Consequently, as the combination of Cantor et al. and Dickinson et al. fail to teach or suggest each element of independent claim 1, from which claims 3 and 4 depend, Applicants assert that a *prima facie* case of obviousness has not been established for claims 3 and 4 over Cantor et al. in view of Dickinson et al. and Applicants respectfully request reconsideration and withdrawal of this rejection of claims 3 and 4.

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Conclusion

In view of the foregoing, it is respectfully submitted that the instant application is in condition for allowance. Accordingly, it is respectfully requested that this application be allowed and a Notice of Allowance issued. If the Examiner believes that a telephone conference with Applicants' attorneys would be advantageous to the disposition of this case, the Examiner is cordially requested to telephone the undersigned.

In the event the Commissioner of Patents and Trademarks deems additional fees to be due in connection with this application, Applicants' attorney hereby authorizes that such fee be charged to Deposit Account No. 06-1130.

Respectfully submitted,

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Date: July 29, 2005

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